

***QUALITY MONITORING  
USING  
CASE MIX AND  
ADVERSE EVENT  
OUTCOME REPORTS***

***Implementing Outcome-Based  
Quality Improvement at a  
Home Health Agency***

***2001***

***Department of Health and Human Services  
Health Care Financing Administration***



## SECTION 1

---

### INTRODUCTION

This manual is the second in a three-manual series intended to assist home health agencies to implement the steps in outcome-based quality improvement (OBQI). The first manual, titled *Implementing OASIS at a Home Health Agency to Improve Patient Outcomes (OASIS Implementation Manual)*, introduced agencies to OBQI and to its first step, the collection of uniform health status data on patients receiving home health care. The set of data items utilized in this step is termed the Outcome and Assessment Information Set or OASIS. Home health agencies subject to Medicare Conditions of Participation began collecting OASIS data on all patients receiving skilled care in summer 1999.

The first agency-level reports resulting from the transmission of OASIS data will soon be available. These reports are intended for use in the agency's quality monitoring program. One report, titled the *Case Mix Report*, presents characteristics of the agency's patients at start (or resumption) of care. The second report, the *Adverse Event Outcome Report*, displays incidence rates for infrequent untoward events (outcomes) comparing the agency to a reference sample. This manual describes each of these reports in detail and discusses their use for quality monitoring purposes.

The third manual in the series will present the *Risk-Adjusted Outcome Report*, the cornerstone of OBQI, and its use for agency quality improvement. These outcome reports are scheduled for production approximately one year from now.

This manual comprises one part of a three-part *Outcome-Based Quality Monitoring User's Manual*. The second part of the larger manual is entitled *Accessing OBQM Reports*. It provides the information needed to obtain your agency's reports. The third component is an Appendix to the user's manual entitled *Guidelines for Reviewing the Case Mix and Adverse Event Outcome Reports*. You are strongly advised to reproduce these guidelines and to share them with any individual or groups to whom you present your reports.

This manual is organized in the following manner. Sections 2 and 3 present each report separately -- the case mix report in Section 2 and the adverse event outcome report in Section 3. The data sources for each report are presented, the case mix variables and adverse event outcome measures are defined, and the meaning of each report is discussed. Sample reports are used to illustrate the features described.

In Section 4, precise instructions on using the reports for quality monitoring in an agency are presented. The steps to follow in an overall care improvement process are included and are illustrated with sample reports from a hypothetical

home care agency. Readers should carefully review this section and follow the procedures described to receive the maximum benefit from their own reports.

Section 5 introduces the role of these reports in the agency's overall quality program. Under the Medicare program Conditions of Participation (COP) for home health agencies, the reports have a connection to an agency's overall program evaluation and to the requirement for quarterly record review. The use of the reports in addressing these requirements is discussed.

When the case mix and adverse event outcome reports are received by agencies, we expect one result to be an increased emphasis on data accuracy within the agency. (Such data accuracy issues can be highlighted or exposed when the reports based on these data are reviewed.) Chapter 12 of the *OASIS Implementation Manual* contains approaches for monitoring and increasing data accuracy within the agency. HHAs are advised to refer to this chapter for detailed data quality audit procedures.

As the first reports resulting from OASIS data collection, the case mix and adverse event outcome reports provide home health agencies their first opportunities to begin using outcomes for quality monitoring purposes. *Outcome enhancement* is the term applied to the investigation of specific patient outcomes, focusing on those aspects of care delivery that led to these outcomes. Evaluating or investigating these care processes entails reviewing the care provided to determine any needed changes in care delivery. Such recommendations for change should be systematically documented in a written plan. In addition, the plan should be thoroughly implemented and continually monitored in order to effectively change care delivery. Once quality monitoring and performance improvement are successfully implemented in an agency and become "steady-state" activities, they emerge as powerful agency tools to continuously improve care for the benefit of patients.

We strongly encourage all agencies to take advantage of the information presented in the reports to provide direction for their continuous quality monitoring activities. These early steps will lay the foundation for subsequent quality improvement efforts based on outcomes in response to risk-adjusted outcome reports expected to be available next year.

## SECTION 2

---

### THE CASE MIX REPORT

This section describes the *Case Mix Report*, explains how OASIS data contribute to case mix reports, and provides guidance for interpreting and making use of the information presented.

#### A. CASE MIX REPORT DEFINED

A case mix report is a numeric table that indicates how the case mix profile of one home health agency compares to a national reference sample, and, optionally, how the case mix of an agency compares to itself at an earlier point in time. Case mix refers to the characteristics of the patients for whom a home health agency provides care. The case mix report presents a picture (or snapshot) of what a home health agency's patients look like at the beginning of a care episode. (The beginning of a care episode is marked by either a start of care or a resumption of care following an inpatient stay.) At the present time, the report is a picture of only Medicare or Medicaid patients since these are the only patients for whom home health agencies are transmitting OASIS data to HCFA.

A sample case mix report for a hypothetical home health agency, Faircare Home Health Services, is presented in Table 2.1.

It is important to realize that a patient who is admitted to your agency, then is transferred to an inpatient facility WITHOUT discharge, then resumes care, and is subsequently discharged, actually is represented as two episodes of care in the report. One episode goes from start of care to transfer to inpatient facility, while the second goes from resumption of care to discharge. This approach to defining an episode of care will be used for all reports that are based on OASIS data. It should also be noted that this is not the same as a payment episode under PPS.

Notice in the sample case mix report for Faircare Home Health Services that the current report period includes 601 patients. This number is found in the heading at the top of the report. The reference sample -- the patients to whom Faircare's patients are being compared -- consists of 29,983 patients in the sample report. The reference sample is composed of all patients served by home health agencies that are subject to the OASIS reporting requirement, subject to data quality screening criteria. The reference sample will be much larger for actual reports than it is in this hypothetical example.

**TABLE 2.1: Sample Case Mix Report.**

Agency Name: Faircare Home Health Services  
 Agency ID: HHA01  
 Location: Anytown, USA  
 Medicare Number: 007001  
 Medicaid Number: 99988001

Requested Current Period: 09/1999-08/2000  
 Actual Current Period: 09/1999-08/2000  
 Number of Cases in Current Period: 601  
 Number of Cases in Reference Sample: 29983  
 Date Report Printed: 11/30/2000

**All Patients' Case Mix Profile at Start/Resumption of Care**

	Current Mean	Reference Mean	Sig.		Current Mean	Reference Mean	Sig.
<b>Demographics</b>				<b>ADL Status Prior to SOC/ROC</b>			
Age (average in years)	70.75	72.78	**	Grooming (0-3, scale average)	0.66	0.52	**
Gender: Female (%)	69.4%	62.9%	**	Dress upper body (0-2, scale avg.)	0.35	0.35	
Race: Black (%)	1.7%	10.7%	**	Dress lower body (0-3, scale avg.)	0.70	0.63	
Race: White (%)	97.5%	85.5%	**	Bathing (0-5, scale average)	1.33	1.20	
Race: Other (%)	0.8%	3.8%	**	Toileting (0-4, scale average)	0.39	0.38	
<b>Payment Source</b>				Transferring (0-5, scale average)	0.38	0.44	**
Any Medicare (%)	80.4%	82.6%		Ambulation (0-5, scale average)	0.70	0.71	
Any Medicaid (%)	12.9%	14.3%		Eating (0-5, scale average)	0.22	0.21	
Any HMO (%)	3.0%	5.8%	*	<b>IADL Disabilities at SOC/ROC</b>			
Medicare HMO (%)	1.3%	2.2%		Light meal prep (0-2, scale avg.)	1.02	0.90	**
Any third party (%)	19.9%	21.9%		Transportation (0-2, scale avg.)	1.05	0.99	**
<b>Current Residence</b>				Laundry (0-2, scale average)	1.62	1.51	**
Own home (%)	74.7%	78.7%		Housekeeping (0-4, scale avg.)	2.89	2.68	**
Family member home (%)	20.5%	14.1%	**	Shopping (0-3, scale average)	2.10	2.06	
<b>Current Living Situation</b>				Phone use (0-5, scale average)	0.63	0.72	
Lives alone (%)	28.6%	29.4%		Mgmt. oral meds (0-2, scale avg.)	0.69	0.70	
With family member (%)	66.7%	64.2%		<b>IADL Status Prior to SOC/ROC</b>			
With friend (%)	1.3%	1.6%		Light meal prep (0-2, scale avg.)	0.65	0.56	*
With paid help (%)	2.3%	3.3%		Transportation (0-2, scale avg.)	0.78	0.69	**
<b>Assisting Persons</b>				Laundry (0-2, scale average)	1.10	0.96	**
Person residing in home (%)	57.0%	55.9%		Housekeeping (0-4, scale avg.)	1.93	1.73	*
Person residing outside home (%)	44.3%	53.0%	**	Shopping (0-3, scale average)	1.45	1.32	
Paid help (%)	9.3%	14.1%	**	Phone use (0-5, scale average)	0.49	0.59	
<b>Primary Caregiver</b>				Mgmt. oral meds (0-2, scale avg.)	0.53	0.54	
Spouse/significant other (%)	31.0%	33.6%		<b>Respiratory Status</b>			
Daughter/son (%)	33.0%	26.4%	**	Dyspnea (0-4, scale average)	1.33	1.19	
Other paid help (%)	3.7%	6.1%	*	<b>Therapies Received at Home</b>			
No one person (%)	21.7%	20.2%		IV/infusion therapy (%)	4.3%	3.7%	
<b>Primary Caregiver Assistance</b>				Parenteral nutrition (%)	0.5%	0.3%	
Freq. of assistance (0-6, scale avg.)	4.11	4.10		Enteral nutrition (%)	2.2%	1.8%	
<b>Inpatient DC within 14 Days of SOC/ROC</b>				<b>Sensory Status</b>			
From hospital (%)	69.1%	68.4%		Vision impairment (0-2, scale avg.)	0.32	0.30	
From rehab facility (%)	7.2%	6.4%		Hearing impair. (0-4, scale avg.)	0.38	0.45	**
From nursing home (%)	1.8%	3.3%		Speech/language (0-5, scale avg.)	0.45	0.47	
<b>Med. Reg. Chg. w/in 14 Days of SOC/ROC</b>				<b>Pain</b>			
Medical regimen change (%)	67.7%	81.2%	**	Pain interf. w/activity (0-3, scale avg.)	0.95	0.98	
<b>Prognoses</b>				Intractable pain (%)	14.0%	13.7%	
Moderate recovery prognosis (%)	85.3%	85.9%		<b>Neuro/Emotional/Behavioral Status</b>			
Good rehab prognosis (%)	62.6%	68.2%	*	Moderate cognitive disability (%)	10.8%	11.9%	
<b>ADL Disabilities at SOC/ROC</b>				Severe confusion disability (%)	5.7%	6.9%	
Grooming (0-3, scale average)	1.02	0.86	**	Severe anxiety level (%)	16.7%	11.7%	**
Dress upper body (0-2, scale avg.)	0.56	0.59	*	Behav probs > twice a week (%)	14.0%	5.7%	**
Dress lower body (0-3, scale avg.)	1.22	1.10		<b>Integumentary Status</b>			
Bathing (0-5, scale average)	2.15	2.03		Presence of wound/lesion (%)	31.6%	31.2%	
Toileting (0-4, scale average)	0.63	0.57		Stasis ulcer(s) present (%)	3.7%	2.9%	
Transferring (0-5, scale average)	0.64	0.70	**	Surgical wound(s) present (%)	21.1%	22.3%	
Ambulation (0-5, scale average)	1.05	1.07		Pressure ulcer(s) present (%)	8.2%	5.4%	*
Eating (0-5, scale average)	0.33	0.32		Stage 2-4 ulcer(s) present (%)	6.5%	4.5%	**
				Stage 3-4 ulcer(s) present (%)	4.0%	1.4%	**

**TABLE 2.1: Sample Case Mix Report. (cont'd)**

Agency Name: Faircare Home Health Services  
 Agency ID: HHA01  
 Location: Anytown, USA  
 Medicare Number: 007001  
 Medicaid Number: 999888001

Requested Current Period: 09/1999-08/2000  
 Actual Current Period: 09/1999-08/2000  
 Number of Cases in Current Period: 601  
 Number of Cases in Reference Sample: 29983  
 Date Report Printed: 11/30/2000

**All Patients' Case Mix Profile at Start/Resumption of Care**

	Current Mean	Reference Mean	Sig.		Current Mean	Reference Mean	Sig.
<b>Elimination Status</b>				<b>Length of Stay</b>			
UTI within past 14 days (%)	22.5%	9.7%	**	LOS until discharge (avg. in days)	49.52	40.35	**
Urinary incont./catheter present (%)	12.6%	16.7%	**	LOS from 1 to 31 days (%)	46.6%	54.0%	**
Incontinent day and night (%)	10.0%	9.3%		LOS from 32 to 62 days (%)	28.0%	30.0%	
Urinary catheter (%)	6.0%	5.9%		LOS from 63 to 124 days (%)	17.8%	11.8%	**
Bowel incont. (0-5, scale avg.)	0.29	0.23		LOS more than 124 days (%)	7.7%	4.3%	**
<b>Acute Conditions</b>				* The probability is 1% or less that the difference is due to chance, and 99% or more that the difference is real.  ** The probability is 0.1% or less that the difference is due to chance, and 99.9% or more that the difference is real.			
Orthopedic (%)	18.5%	21.5%					
Neurologic (%)	13.1%	9.3%	*				
Open wounds/lesions (%)	33.0%	31.8%					
Terminal condition (%)	5.7%	5.6%					
Cardiac/peripheral vascular (%)	27.0%	30.9%					
Pulmonary (%)	17.3%	16.9%					
Diabetes mellitus (%)	7.7%	8.4%					
Gastrointestinal disorder (%)	12.5%	11.5%					
Contagious/communicable (%)	9.8%	3.0%	**				
Urinary incont./catheter (%)	6.0%	8.1%					
Mental/emotional (%)	9.3%	3.1%	**				
Oxygen therapy (%)	11.2%	11.2%					
IV/infusion therapy (%)	4.3%	3.7%					
Enteral/parenteral nutrition (%)	2.7%	2.0%					
Ventilator (%)	0.0%	0.1%					
<b>Chronic Conditions</b>							
Dependence in living skills (%)	42.1%	35.9%	*				
Dependence in personal care (%)	37.9%	22.9%	**				
Impaired ambulation/mobility (%)	14.0%	13.4%					
Eating disability (%)	4.2%	3.2%					
Urinary incontinence/catheter (%)	13.1%	13.7%					
Dependence in med. admin. (%)	44.1%	39.9%					
Chronic pain (%)	7.7%	5.7%					
Cognitive/mental/behavioral (%)	28.6%	23.5%	*				
Chronic pt. with caregiver (%)	40.4%	34.0%	**				
<b>Home Care Diagnoses</b>							
Infectious/parasitic diseases (%)	13.0%	4.5%	**				
Neoplasms (%)	11.8%	12.3%					
Endocrine/nutrit./metabolic (%)	29.0%	27.1%					
Blood diseases (%)	8.2%	6.7%					
Mental diseases (%)	20.1%	9.9%	**				
Nervous system diseases (%)	13.8%	9.4%	**				
Circulatory system diseases (%)	61.6%	55.3%	*				
Respiratory system diseases (%)	24.3%	19.5%	*				
Digestive system diseases (%)	13.8%	12.0%					
Genitourinary sys. diseases (%)	10.7%	10.4%					
Pregnancy problems (%)	0.5%	0.2%					
Skin/subcutaneous diseases (%)	6.2%	7.4%					
Musculoskeletal sys. diseases (%)	26.1%	23.5%					
Congenital anomalies (%)	1.8%	0.8%					
Ill-defined conditions (%)	24.1%	19.6%	*				
Fractures (%)	12.0%	9.1%					
Intracranial injury (%)	0.2%	0.3%					
Other injury (%)	9.5%	5.9%	**				
Iatrogenic conditions (%)	2.2%	3.1%					

Also at the top of the report, we find the date the report was printed and the report period. The dates of the report period indicate that all patients who had a transfer or discharge on or after the first day of September 1999 and on or before the last day of August 2000 are included in this report. Your agency will be able to select the report period you wish. It is strongly recommended that you select a report period of one year, to ensure that the profile represents all seasons of the year as well as providing a sufficient number of episodes of care to yield statistically valid comparisons between your agency and the reference sample. Note that patients are selected for the report based on the discharge/transfer date for the episode of care. A further condition for inclusion in both case mix and adverse event outcome reports is that there must be a matching start or resumption of care assessment on the OASIS system, which effectively excludes from analysis episodes of care which started prior to the July 1999 effective date of the OASIS reporting requirement for home health agencies.

## **B. SOURCES OF INFORMATION FOR THE CASE MIX REPORT**

Where do the data for the case mix report come from? All your agency's start of care assessments and resumption of care assessments provide the data for the great majority of the case mix variables. Therefore, the case mix report represents an aggregation of patient status at the beginning of an episode of care.

Table 2.2, Source(s) of Case Mix Report Information, lists each measure included in the case mix report along with the OASIS item(s) on which each measure is based. More information on how selected variables are computed, along with variable definitions, is included in the Appendix to this manual.

The OASIS data from the transfer, death, or discharge points (reason for assessment response 6, 7, 8, or 9) are used to compute the length of stay case mix measure. This is found at the very end of the case mix report -- the last section on the bottom right column.

## **C. MEANING OF THE INFORMATION IN THE CASE MIX REPORT**

The case mix report is valuable for several uses in an agency. In the past, most agencies have compiled several pieces of this information on their own. The case mix report provides it without any additional steps of data entry or data analysis, since the report comes directly from the OASIS data you transmit to the State.



**TABLE 2.2: Source(s) of Case Mix Report Information.**

Case Mix Report Measures	OASIS-B1 Item(s)	Case Mix Report Measures	OASIS-B1 Item(s)
<b>Demographics</b>		<b>ADL Status Prior to SOC/ROC</b>	
Age (average in years)	M0066, M0090	Grooming (0-3, scale average)	M0640
Gender: Female (%)	M0069	Dress upper body (0-2, scale avg.)	M0650
Race: Black (%)	M0140	Dress lower body (0-3, scale avg.)	M0660
Race: White (%)		Bathing (0-5, scale average)	M0670
Race: Other (%)		Toileting (0-4, scale average)	M0680
<b>Payment Source</b>		Transferring (0-5, scale average)	M0690
Any Medicare (%)	M0150	Ambulation (0-5, scale average)	M0700
Any Medicaid (%)		Eating (0-5, scale average)	M0710
Any HMO (%)			
Medicare HMO (%)		<b>IADL Disabilities at SOC/ROC</b>	
Any third party (%)		Light meal prep (0-2, scale avg.)	M0720
<b>Current Residence</b>		Transportation (0-2, scale avg.)	M0730
Own home (%)	M0300	Laundry (0-2, scale average)	M0740
Family member home (%)		Housekeeping (0-4, scale avg.)	M0750
<b>Current Living Situation</b>		Shopping (0-3, scale average)	M0760
Lives alone (%)	M0340	Phone use (0-5, scale average)	M0770
With family member (%)		Mgmt. oral meds (0-2, scale avg.)	M0780
With friend (%)			
With paid help (%)		<b>IADL Status Prior to SOC/ROC</b>	
<b>Assisting Persons</b>		Light meal prep (0-2, scale avg.)	M0720
Person residing in home (%)	M0350	Transportation (0-2, scale avg.)	M0730
Person residing outside home (%)		Laundry (0-2, scale average)	M0740
Paid help (%)		Housekeeping (0-4, scale avg.)	M0750
<b>Primary Caregiver</b>		Shopping (0-3, scale average)	M0760
Spouse/significant other (%)	M0360	Phone use (0-5, scale average)	M0770
Daughter/son (%)		Mgmt. oral meds (0-2, scale avg.)	M0780
Other paid help (%)			
No one person (%)		<b>Respiratory Status</b>	
<b>Primary Caregiver Assistance</b>		Dyspnea (0-4, scale average)	M0490
Freq. of assistance (0-6, scale avg.)	M0360, M0370	<b>Therapies Received at Home</b>	
<b>Inpatient DC within 14 Days of SOC/ROC</b>		IV/infusion therapy (%)	M0250
From hospital (%)	M0175	Parenteral nutrition (%)	
From rehab facility (%)		Enteral nutrition (%)	
From nursing home (%)		<b>Sensory Status</b>	
<b>Med. Reg. Chg. w/in 14 Days of SOC/ROC</b>		Vision impairment (0-2, scale avg.)	M0390
Medical regimen change (%)	M0200	Hearing impair. (0-4, scale avg.)	M0400
<b>Prognoses</b>		Speech/language (0-5, scale avg.)	M0410
Moderate recovery prognosis (%)	M0260	<b>Pain</b>	
Good rehab prognosis (%)	M0270	Pain interf. w/activity (0-3, scale avg.)	M0420
<b>ADL Disabilities at SOC/ROC</b>		Intractable pain (%)	M0430
Grooming (0-3, scale average)	M0640	<b>Neuro/Emotional/Behavioral Status</b>	
Dress upper body (0-2, scale avg.)	M0650	Moderate cognitive disability (%)	M0560
Dress lower body (0-3, scale avg.)	M0660	Severe confusion disability (%)	M0570
Bathing (0-5, scale average)	M0670	Severe anxiety level (%)	M0580
Toileting (0-4, scale average)	M0680	Behav probs > twice a week (%)	M0620
Transferring (0-5, scale average)	M0690	<b>Integumentary Status</b>	
Ambulation (0-5, scale average)	M0700	Presence of wound/lesion (%)	M0440
Eating (0-5, scale average)	M0710	Stasis ulcer(s) present (%)	M0440, M0468
		Surgical wound(s) present (%)	M0440, M0482
		Pressure ulcer(s) present (%)	M0440, M0450
		Stage 2-4 ulcer(s) present (%)	
		Stage 3-4 ulcer(s) present (%)	

**TABLE 2.2: Source(s) of Case Mix Report Information. (cont'd)**

Case Mix Report Measures	OASIS-B1 Item(s)	Case Mix Report Measures	OASIS-B1 Item(s)
<b>Elimination Status</b>		<b>Home Care Diagnoses</b>	
UTI within past 14 days (%)	M0510	Infectious/parasitic diseases (%)	M0230, M0240
Urinary incont./catheter present (%)	M0520	Neoplasms (%)	
Incontinent day and night (%)	M0520, M0530	Endocrine/nutrit./metabolic (%)	
Urinary catheter (%)	M0520	Blood diseases (%)	
Bowel incont. (0-5, scale avg.)	M0540	Mental diseases (%)	
<b>Acute Conditions</b>		Nervous system diseases (%)	
Orthopedic (%)	M0175, M0180, M0190, M0200, M0210, M0220, M0250, M0280, M0440, M0500, M0520, M0550, M0630	Circulatory system diseases (%)	
Neurologic (%)		Respiratory system diseases (%)	
Open wounds/lesions (%)		Digestive system diseases (%)	
Terminal condition (%)		Genitourinary sys. diseases (%)	
Cardiac/peripheral vascular (%)		Pregnancy problems (%)	
Pulmonary (%)		Skin/subcutaneous diseases (%)	
Diabetes mellitus (%)		Musculoskeletal sys. diseases (%)	
Gastrointestinal disorder (%)		Congenital anomalies (%)	
Contagious/communicable (%)		Ill-defined conditions (%)	
Urinary incont./catheter (%)		Fractures (%)	
Mental/emotional (%)		Intracranial injury (%)	
Oxygen therapy (%)		Other injury (%)	
IV/infusion therapy (%)		Iatrogenic conditions (%)	
Enteral/parenteral nutrition (%)			
Ventilator (%)		<b>Length of Stay</b>	
<b>Chronic Conditions</b>		LOS until discharge (avg. in days)	M0100, M0030, M0032, M0906
Dependence in living skills (%)	M0175, M0200, M0720, M0730, M0740, M0750, M0760, M0770	LOS from 1 to 31 days (%)	
Dependence in personal care (%)	M0175, M0200, M0640, M0650, M0660, M0670	LOS from 32 to 62 days (%)	
Impaired ambulation/mobility (%)	M0175, M0200, M0680, M0690, M0700	LOS from 63 to 124 days (%)	
Eating disability (%)	M0175, M0200, M0710	LOS more than 124 days (%)	
Urinary incontinence/catheter (%)	M0175, M0200, M0220, M0520		
Dependence in med. admin. (%)	M0175, M0200, M0780, M0790, M0800		
Chronic pain (%)	M0175, M0200, M0220, M0430		
Cognitive/mental/behavioral (%)	M0175, M0200, M0220, M0610		
Chronic pt. with caregiver (%)	M0350 and any chronic condition		

The characteristics of the patients for whom your agency provides care will affect many decisions you make about patient care delivery, including:

- need to develop or modify policies, procedures, or protocols;
- possible care path development, or disease management approaches;
- decisions about obtaining or developing patient education materials; and
- examining potential areas where increased care coordination may be indicated.

You can also review your current staffing in light of the case mix report. You might decide that additional staff of one type or another are needed. If you have an increased percentage of patients with musculoskeletal disease, for example, you might want to be sure that your therapy staff is adequate. Or your current staff may need additional training if your case mix is changing. As illustrations, if you serve more patients with wounds, your current staff may need additional wound care expertise; or if your percentage of patients with terminal conditions has increased, you might need to pursue additional education in end-of-life care.

The case mix report is valuable for your agency's strategic planning and program development. It can be presented to your governing body as evidence of resource allocation or used in budget development. This report is particularly valuable to monitor over time to verify your "hunches" about case mix changes. If, for example, you or your staff observe what you think is a change in the characteristics of patients referred to your agency for care, the case mix report will allow you the opportunity to verify whether such a change has actually occurred, and whether your agency's patients differ from those served by other home health agencies.



## SECTION 3

---

### THE ADVERSE EVENT OUTCOME REPORT

This section describes the two forms of the *Adverse Event Outcome Report*, explains how OASIS data contribute to adverse event outcome reports, and provides guidance for interpreting and making use of the information presented.

#### A. ADVERSE EVENT OUTCOME REPORT DEFINED

Adverse events serve as markers for potential problems in care because of their negative nature and relatively low frequency. It is important to emphasize the word "potential" in this definition. Whether or not an individual patient situation results from inadequate care provision can only be determined through investigation of the care actually provided to specific patients.

The adverse events included in this report are outcome measures, in the sense that they represent a change in health status between start or resumption of care and discharge or transfer to inpatient facility. For most adverse event outcomes, change in health status is measured directly (for example, increase in number of pressure ulcers). A few adverse event outcome measures rely on the occurrence of an emergent care encounter for specific reasons as an indicator of change in health status. Three additional adverse event outcomes are based on a combination of patient health status and support available to the patient at discharge, indicative of an unmet need. Because adverse events occur very infrequently and are judged to be serious untoward outcomes, they are treated differently from the outcome measures based on OASIS data that are used in outcome-based quality improvement activities. The adverse event outcome report is not adjusted for variation in patient characteristics, and it includes a much smaller number of outcomes than will the broader risk-adjusted outcome report.

The **graphic** adverse event outcome report displays incidence rates for infrequent, untoward events (or outcomes) comparing one agency to a reference sample (and, in the case of a three-bar report, comparing one agency to itself over time). The graphical method of presentation is used to enhance readability and clarity. Because the number of measures is relatively small, and they are all measured on a common scale (presence or absence of the adverse event), they lend themselves to this mode of presentation more readily than case mix measures.

The second version of the adverse event report is the **tabular** form. In addition to presenting the incidence rates for these events (outcomes) compared to the reference sample, a listing of patients for whom the adverse event occurred is included. The tabular listing is provided to facilitate review of individual cases to

determine to what extent a problem of inadequate care exists, and what specific care practices may need to be changed.

Sample graphical and tabular adverse event outcome reports are presented for a hypothetical home health agency (Faircare) in Figure 3.1 and Table 3.1, respectively. As with the case mix report, the number of cases contributing to the adverse event outcome reports is the total number of patients discharged from the home health agency during the time period selected for the report<sup>1</sup>. The reports express the incidence of each adverse event as a percentage of individuals for whom the adverse event could occur, over the time period of the report. The number of cases contributing to a specific adverse event outcome measure (referred to as complete data cases in the tabular report) is often less than the total cases for a agency, because some individuals are excluded from analysis based on status at start/resumption of care or based on availability of the data needed to calculate the measure. For example, terminal patients are excluded from the analysis of Unexpected Death, because death is the expected outcome for these patients. Similarly, only patients with favorable prognosis at start (or resumption) of care contribute to the Unexpected Nursing Home Admission measure.

## **B. SOURCES OF INFORMATION FOR THE ADVERSE EVENT OUTCOME REPORT**

The adverse event outcome reports rely on information from both the start (or resumption) of care assessment and OASIS data collected at transfer, death, or discharge. Table 3.2 indicates, for each adverse event outcome, the specific OASIS items at each time point used to construct that measure. Detailed definitions of each adverse event outcome are included in the Appendix to this manual. In addition to relying on data from two time points, some adverse event measures are based on multiple data items. For example, the adverse event, Discharged to Community Needing Toileting Assistance, relies on Discharge Disposition (M0870), Assisting Persons (M0350), Ambulation (M0700), and Toileting Ability (M0680) measured at discharge.

---

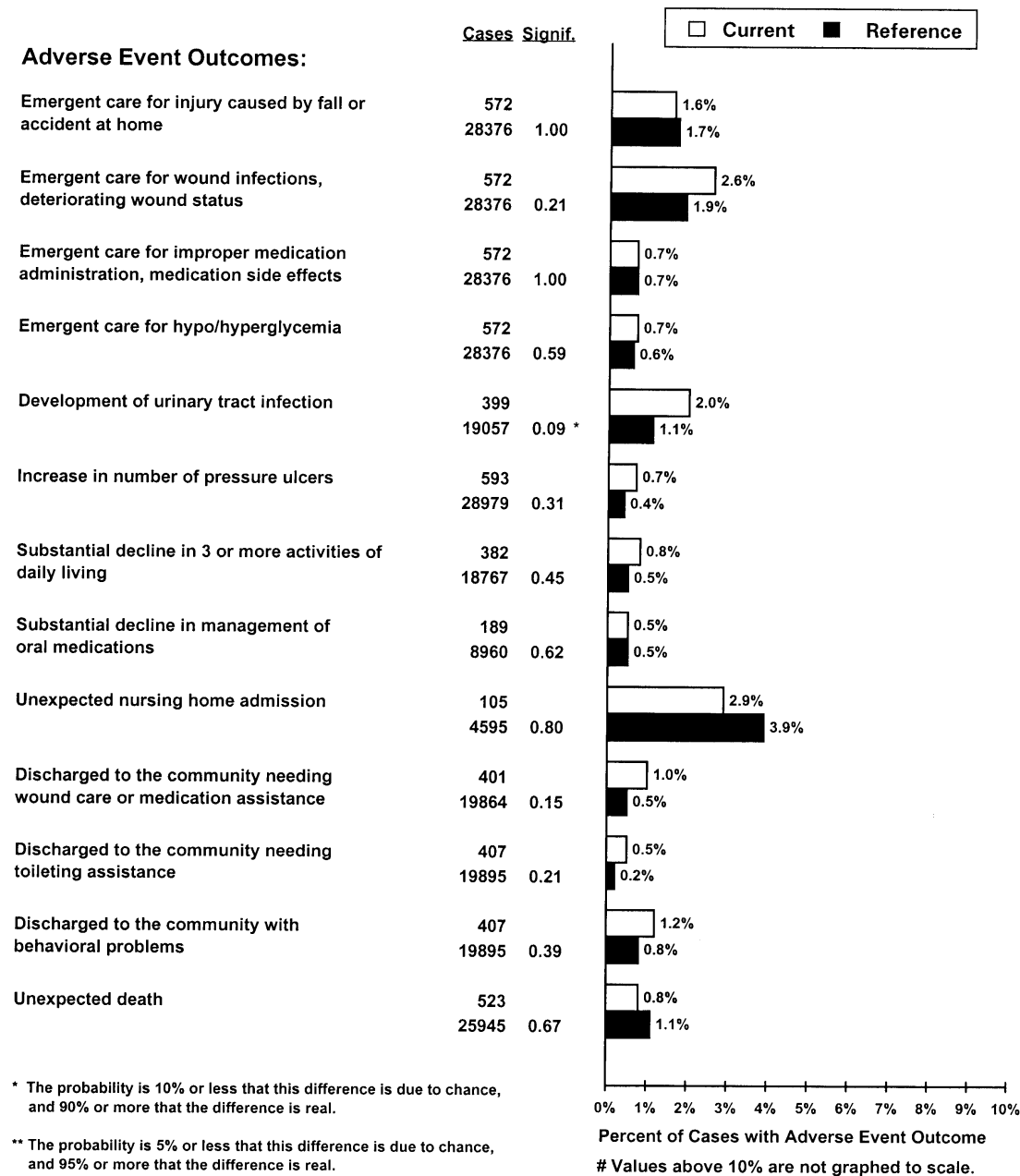
<sup>1</sup> A further condition for inclusion in both case mix and adverse event outcome reports is that there must be a matching start or resumption of care assessment on the OASIS system, which effectively excludes from analysis episodes of care which started prior to the July 1999 effective date of the OASIS reporting requirement for home health agencies.

**FIGURE 3.1: Sample (Graphical) Adverse Event Outcome Report.**

Agency Name: Faircare Home Health Services  
 Agency ID: HHA01  
 Location: Anytown, USA  
 Medicare Number: 007001  
 Medicaid Number: 999888001

Requested Current Period: 09/1999-08/2000  
 Actual Current Period: 09/1999-08/2000  
 Number of Cases in Current Period: 601  
 Number of Cases in Reference Sample: 29983  
 Date Report Printed: 11/30/2000

### Adverse Event Outcome Report



**TABLE 3.1: Sample (Tabular) Adverse Event Outcome Report.**

Agency Name: Faircare Home Health Services  
 Agency ID: HHA01  
 Location: Anytown, USA  
 Medicare Number: 007001  
 Medicaid Number: 999888001

Requested Current Period: 09/1999-08/2000  
 Actual Current Period: 09/1999-08/2000  
 Number of Cases in Current Period: 601  
 Number of Cases in Reference Sample: 29983  
 Date Report Printed: 11/30/2000

### Adverse Event Outcome Report Patient Listing

#### Emergent Care for Injury Caused by Fall or Accident at Home

Complete Data Cases: 572      Number of Events: 9      Agency Incidence: 1.6%      Reference Incidence: 1.7%

Patient ID	Last Name	First Name	Gender	Birth Date	SOC/ROC	DC/Transfer
654896104	Craig	Ron	M	05/11/1925	09/22/99	12/27/99
544740859	Hawk	Janet	F	08/29/1935	02/12/00	04/18/00
445140130	Schlue	Cindy	F	06/13/1939	03/28/00	06/10/00
674803196	Staloski	Mina	F	09/16/1933	05/22/00	05/26/00
175305360	Amador	Arnold	M	06/06/1928	11/17/99	11/25/99
451896539	Tosh	Ellen	F	01/16/1934	05/27/00	06/02/00
410242616	Adkins	Lisa	F	01/01/1925	04/28/00	08/05/00
037083519	Rose	Cecil	M	04/11/1924	09/26/99	12/05/99
038923073	Tanaka	Bruce	M	04/28/1938	09/02/99	11/01/99

#### Emergent Care for Wound Infections, Deteriorating Wound Status

Complete Data Cases: 572      Number of Events: 15      Agency Incidence: 2.6%      Reference Incidence: 1.9%

Patient ID	Last Name	First Name	Gender	Birth Date	SOC/ROC	DC/Transfer
601714911	Potter	Cindy	F	10/03/1938	03/22/00	03/23/00
605578965	Ridgeway	Jersey	F	08/16/1919	09/24/99	09/25/99
848022770	Jenkins	Steve	M	08/29/1931	01/20/00	02/18/00
157235821	Connot	Carole	F	09/01/1917	05/02/00	05/09/00
364627291	Kapoi	Bernadeane	F	09/03/1930	12/09/99	03/05/00
606116128	Dickerson	Mary Anne	F	07/27/1935	04/16/00	07/23/00
223434953	Dedmond	Cathy	F	06/26/1917	09/19/99	10/28/99
760263344	Fortis	Jay	M	01/10/1928	01/19/00	03/23/00
203633766	Liblanc	Marilyn	F	05/04/1924	11/07/99	01/29/00
890266877	Beave	Levond	F	12/10/1934	06/19/00	06/30/00
774698823	Anselm	Marge	F	01/05/1941	05/02/00	08/01/00
752690714	Freeman	Victoria	F	06/04/1932	05/21/00	07/31/00
388120765	Fatzer	Virginia	F	08/17/1920	02/10/00	03/24/00
648423584	DeBlois	Lori	F	02/01/1915	11/18/99	12/22/99
425853763	Anderson	Carolyn	F	08/03/1924	04/19/00	05/26/00

#### Emergent Care for Improper Medication Administration, Medication Side Effects

Complete Data Cases: 572      Number of Events: 4      Agency Incidence: 0.7%      Reference Incidence: 0.7%

Patient ID	Last Name	First Name	Gender	Birth Date	SOC/ROC	DC/Transfer
003678864	Ryan	Betty	F	04/27/1923	11/13/99	01/09/00
745499372	Burke	Leonard	M	12/20/1918	02/22/00	05/03/00
223324976	Rice	Bonnie	F	12/04/1924	10/23/99	02/17/00
039892392	Pierce	Susan	F	07/13/1935	01/30/00	04/10/00

#### Emergent Care for Hypo/Hyperglycemia

Complete Data Cases: 572      Number of Events: 4      Agency Incidence: 0.7%      Reference Incidence: 0.6%

Patient ID	Last Name	First Name	Gender	Birth Date	SOC/ROC	DC/Transfer
370756750	McCowan	Sandra	F	11/10/1931	10/06/99	01/06/00
571865967	Badger	Penny	F	01/18/1929	01/02/00	04/24/00
184679971	Penn	Deborah	F	06/02/1915	07/22/00	08/29/00
414789317	Thompson	Pat	F	12/14/1931	06/15/00	08/02/00